

# nbii Access

## Conservation Service Awards to NBII Coalition Co-Chairs



Bonnie Carroll (left) and Gale Norton

Bonnie C. Carroll and Dr. Jack Hill each received a Conservation Service Award (CSA) on February 2 at the 62nd Departmental Honor Awards Convocation held at the Sidney W. Yates Auditorium, Main



Jack Hill and Gale Norton

Interior Building, in Washington, D.C. They were personally recognized at this event by Secretary of the Department of the Interior (DOI) Gale Norton for their exceptional achievements.

A CSA recognizes outstanding performance and direct service to the effectiveness of the Department's mission in conjunction with one or more bureaus. It is considered the highest honor that can be bestowed upon a private citizen or group by the Department.

Carroll and Hill serve as Co-Chairs of the NBII Coalition, an informal group of organizations, companies, and individuals who support the objectives of the NBII and are working together to develop its capabilities and coverage. Both

*(continued on page 3)*

## The PLANTS Database: An Evolving Biological Resource

For 11 years, the U.S. Department of Agriculture's National Plant Data Center (NPDC), an NBII partner, has developed and expanded its online PLANTS Database <<http://plants.usda.gov>>. This project has been a useful tool in providing accessible and comprehensive access to U.S. plant information to a variety of users. Usage has increased over the years from 35,000 users per month (see *Access*, January 1999) to as many as 600,000 users (18 million hits) per month.

The success of the PLANTS

Database is due to a variety of partnerships with other federal agencies, universities, and contributors. The data have been applied in other applications such as the partnership with the NBII to build the Integrated Taxonomic Information System (ITIS). As an ITIS partner, PLANTS serves as the source and authority for taxonomic information on U.S. plants. PLANTS provides periodic updates to maintain the currency of ITIS plant data.

*(continued on page 4)*

### In This Issue

NBII and NSF Co-Sponsor Biodiversity and Ecosystem Informatics Workshop .....	2
NBII Exhibits at AAAS.....	4
Species Knowledge Management Working Group: Sharing Species-related Information Across Nodes .....	5
Electronic or Print Access?.....	5
Invasive Species Toolbox .....	6
NBII Metadata Training.....	7
Butterflies Beckon!.....	7
Upcoming Events of NBII Interest .....	8

# NBII and NSF Co-Sponsor Biodiversity and Ecosystem Informatics Workshop

The tools needed to solve environmental challenges (e.g., global climate change, emerging diseases, decreasing biodiversity, and waning resources) are currently being researched and developed under the rubric of "ecosystem informatics" (i.e., eco-informatics). Eco-informatics has been defined as "the study of the inherent structure of ecological information in order to create and apply computer technology for its management and analysis" <<http://seek.ecoinformatics.org/>>. More specifically, eco-informatics is "the science of developing computer databases and algorithms to facilitate and expedite large scale ecological research." Most of the efforts to help solve environmental problems through the use of eco-informatics tools focus on the ability to use such tools to increase research productivity and increase the published availability of research data <[www.evergreen.edu/bdei](http://www.evergreen.edu/bdei)>.

In recent years, discussions and meetings have been held between representatives from the National

Aeronautics and Space Administration (NASA), the National Science Foundation (NSF), the NBII, and the Environmental Protection Agency (EPA), among others, on the future of eco-informatics as a decision-making tool for resource managers and policymakers. Research directions in biodiversity and ecosystem informatics had been the focus of a June 2000 workshop (sponsored by NASA, the NBII, and the NSF) that produced a report highlighting informatics challenges and a research agenda for acquisition, conversion, and dissemination of data and metadata.

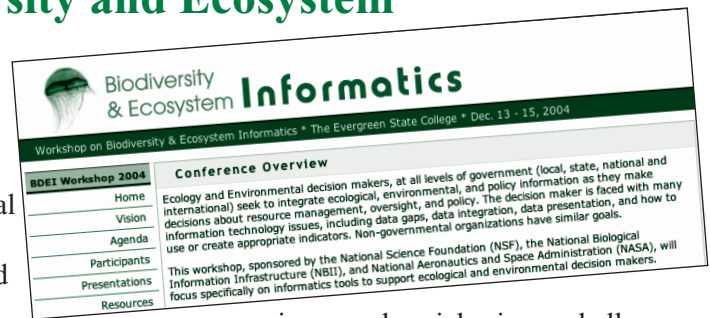
In May 2004 during the NSF Digital Government Annual Program Meeting, a roundtable discussion group agreed that a separate workshop should be held to articulate decision-maker needs regarding eco-informatics tools and to identify future computer

science and social science challenges inherent in providing tools for decision-makers responsible for ecology/environmental concerns.

As a result, on December 13-15, 2004, a workshop focusing on the link between eco-informatics and effective environmental decision-making was held on the campus of Evergreen State College in Olympia, WA. This workshop also addressed past attempts (successes and limitations) to utilize eco-informatics data for decision-making. The invitation-only workshop was attended by over 40 participants representing federal and state science agencies/bureaus, non-governmental organizations, and academia. The workshop was organized by Judy Cushing, The Evergreen State College, and Tyrone Wilson, NBII, and was sponsored by the NSF Digital Government Program and the NBII.

In outlining the scope of the meeting, the Steering Committee considered the traditional information gathering framework inherent in agencies such as EPA; the spectrum of stakeholders (e.g., decision-makers

*(continued on page 3)*



## Access

Access, the newsletter of the National Biological Information Infrastructure, is published by the NBII National Program Office.

Ron Sepic, Editor  
Wendy Wicks, Associate Editor  
Gene Morris, Production Specialist

### Contributors:

Bonnie Carroll  
Gladys Cotter  
Jack Hill  
Vivian Hutchison  
Rebecca Noricks  
Mike Ruggiero  
Elizabeth Sellers  
Annie Simpson  
Crispen Wilson  
Tyrone Wilson

Just send your comments, article ideas, and requests to be added to our mailing list (as well as address corrections) to:

Ron Sepic, Access Editor  
USGS Biological Resources Discipline  
302 National Center  
Reston, VA 20192  
Phone: 703/648-4218  
Fax: 703/648-4224  
E-mail: [ron\\_seplic@usgs.gov](mailto:ron_seplic@usgs.gov)

Be sure to check out Access on the Web at <<http://www.nbii.gov/about/pubs/news>>.

Please direct your general questions about the NBII, including partnership opportunities, to:

Program Manager  
NBII National Program Office  
302 National Center  
Reston, VA 20192  
Phone: 703/648-NBII (6244)  
Fax: 703/648-4224  
E-mail: [nbii@nbii.gov](mailto:nbii@nbii.gov)

Visit the NBII Home Page at <<http://www.nbii.gov>>.

## Correction


An article ran in the fall 2004 issue of *Access* about the Mammal Networked Information System (MaNIS) distributed database network. The lead institution in the MaNIS project is the Museum of Vertebrate Zoology; however, the museum is part of the University of California, Berkeley, not the University of California, Davis, as stated in the article.

## NBII & NSF (continued from page 2)

and the public) and their reliance on information products; and potential strategies related to the effective use of metadata.

The purpose of the “Biodiversity and Ecosystem Informatics (BDEI) for Decision-Making” workshop was to identify customers of ecological information products (decision-makers and the public, in particular) and articulate their information needs. The two primary goals of the workshop, as determined by the Steering Committee, were to: (1) define a computer science and social science research agenda to ameliorate information technology problems faced by decision-makers who use eco-informatics artifacts, and; (2) have NSF use the BDEI workshop report as the foundation for the science agency’s future call for research proposals that will form the basis of a research and policy agenda in biodiversity and ecosystem informatics.

A key activity of the workshop was the formation of two critical breakout sessions. The first session focused on problems and challenges associated with the use of eco-informatics as a tool to aid in decision-making and examined factors stemming from challenging areas related to policy, data presentation, data gaps, tools, and indicators. The second breakout session attempted to articulate research issues and focused on the relationships of information technology areas such as social and human aspects of eco-informatics and decision-making, modeling/simulation, data quality, information integration, and ontologies.

A complete summary of the workshop along with highlights from breakout sessions, plenary sessions, presentations, and recommendations may be viewed at <<http://www.evergreen.edu/bdei/home.php>>. For more information, contact Tyrone Wilson, Ph.D., either by phone (703/648-4075) or e-mail <[tyrone\\_wilson@usgs.gov](mailto:tyrone_wilson@usgs.gov)>. 

## Conservation Service Awards (continued from page 1)

have been tireless in their efforts to raise NBII visibility to trade and professional associations, non-government organizations, and others.

Bonnie Carroll, an internationally recognized expert in scientific and technical information (STI), has been a leader in making quality data for environmental decision-making a reality. She has provided strategic vision for the development of the NBII and has been instrumental in the effectiveness of the Office of Science and Technology Policy’s Biodiversity Informatics Working Group (BioEco), which serves as a mechanism for coordinating biodiversity

informatics initiatives, such as the Global Biodiversity Information Facility (GBIF), across the federal government. She consults extensively in international information exchanges and, under the auspices of the NBII, was instrumental in the development of the Inter-American Biodiversity Information Network (IABIN).

Ms. Carroll, president of Information International Associates, Inc., is the Executive Director of CENDI, a group of 12 federal science agencies (of which the U.S. Geological Survey [USGS] is a member) that cooperate to improve the management of federal STI. She serves on the National Academy of Science U.S. National Committee on CODATA and is the U.S. representative to that organization. She is also the Node Lead for the Southern Appalachian Information Node of the NBII, which she helped found and develop. Congressman Zach Wamp, who has been a key supporter of the development of the NBII, spoke in praise of Carroll, saying, “The recognition was well-


deserved... When you work with Bonnie Carroll, you understand how one’s job can truly be a labor of love.”

Dr. Jack Hill – a Biological, Ecological, and Geospatial Information Systems Specialist – has provided innovative leadership that has contributed significantly to the success of the NBII. Dr. Hill is also a principal in the development

of NBII regional, national, and international partnerships. He serves as the Director of the World Data Center for Biodiversity and Ecology, which is part of the International Council of Science’s (ICSU) World Data Center

System. Centers in the United States are managed through the National Academy of Sciences.

In this capacity, he is a U.S. delegation member to IABIN, a U.S. participant in the Convention on Biodiversity; a U.S. delegation member to GBIF, Co-Chair of the writing team for the Ecological Modeling Societal Theme of the Interagency Working Group on Earth Observations (IWGEO) – a national plan, and most recently contributed to the writing of the Ecology and Biodiversity Societal Themes of the Global Earth Observation System of Systems (GEOSS).

The NBII is a broad, collaborative program to provide increased access to data and information on the nation’s biological resources. Coordinated by the USGS (a DOI bureau), the NBII links diverse, high-quality biological databases, information products, and analytical tools maintained by NBII partners and other contributors in government agencies, academic institutions, non-government organizations, and private industry. 

---

*Carroll and Hill...have been tireless in their efforts to raise NBII visibility to trade and professional associations, NGOs, and others.*

---



## Recent Additions

A recent innovative addition to the PLANTS Database is its ability to capture the comprehensive legal status (threatened and endangered, noxious, or wetland indicator status) for related plants on its Plant Profile pages.

Users can visit any Plant Profile and immediately grasp the complex legal protections for a plant. This is the first time this information has ever been accessible in an “at-a-glance” format.

A plant's legal status applied at one taxonomic level of classification often automatically applies to another. However, until

now, there has never been a listing or location that communicates these legal status relationships between synonyms and related plant species, varieties, or subspecies.

For example, *Chorizanthe robusta* is listed as federally endangered — previous listings would have stopped here. Now, PLANTS also displays the endangered status of its two varieties, *robusta* and *hartwegii*.

It is also important when a state classifies the legal status for an entire genus without specifying particular species. For example, California lists the genus *Cynodon* (Bermudagrass) as a noxious weed. This means that all

Bermudagrass species in California are considered noxious. The PLANTS Database now communicates this relationship at each species' Plant Profile (i.e., *Cynodon dactylon*) because of the genus legal status.

## Information Under Development

Users can expect to see the following information incorporated into the PLANTS Database within the



next several years.

### Pollinator Plant Host Module –

This module, developed in cooperation with the University of Maryland, will provide pollination ecological information for vascular U.S. plants for use in land conservation, habitat restoration, and agricultural production. It will serve as a guide for practitioners in implementing pollinator friendly agriculture and conservation.

### Phytoremediation Information –

This will be a collection of associated information on plant species utilized in phytoremediation—a plant's ability to mediate pollutants, heavy metals, and nutrients. This module will

assist conservationists in ecological restoration. It is being developed in cooperation with the University of Kansas and Kansas State University.

**Wildlife Suitability Ratings** – This project will standardize, compile, and improve wildlife habitat suitability ratings for U.S. plant species. The data will be useful in selecting plant species for wildlife habitat improvement. The information is being developed with Clemson University.

**Images** – Additional image collections continue to be added to PLANTS. Tens of thousands are in the pipeline. New seed images are being integrated in collaboration with the Agricultural Research Service. Enlarged thumbnails will soon be available to provide greater utility for the user.

The NPDC is committed to continuing its partnership with the NBII and many other organizations so we can all share in the vital effort to make data and information about our biological resources more widely available. By working together, we can protect and conserve our natural resources for years to come.

For more information about the PLANTS Database, contact Rebecca Noricks, Plant Information Coordinator, National Plant Data Center, by phone (225/775-6280 x10) or e-mail <rebecca.noricks@la.usda.gov>.

## NBII Exhibits at AAAS

The annual meeting of the American Association for the Advancement of Science (AAAS) was held in Washington, DC, from February 17-21. The NBII exhibit team was pleased to speak with a range of visitors while offering demonstrations and providing a variety of handouts. Exhibit team members included Amy Forrester (left) and Annie Simpson (right).



## Species Knowledge Management Working Group: Sharing Species-related Information Across Nodes

The first meeting of the NBII Species Knowledge Management Working Group (SKMWG) was held January 31. The group consists of representatives from each of the NBII nodes as well as representatives from key NBII partners.

The purpose of this new NBII working group is to identify issues as well as partners and initiatives that will enhance the NBII's capacity to share and deliver species related information.

Why is this so important? It's yet another dimension of the ongoing need in any enterprise as broadly based and ambitious as the NBII to provide the highest quality data and information on biological resources. In this case, "species" are the focus. You get a sense of the challenges this presents when you consider that different organizations use such terms as "species page," "species profile," "species occurrence," "element-occurrence," and other terms to refer to essentially the same thing. The implications of this are profound.

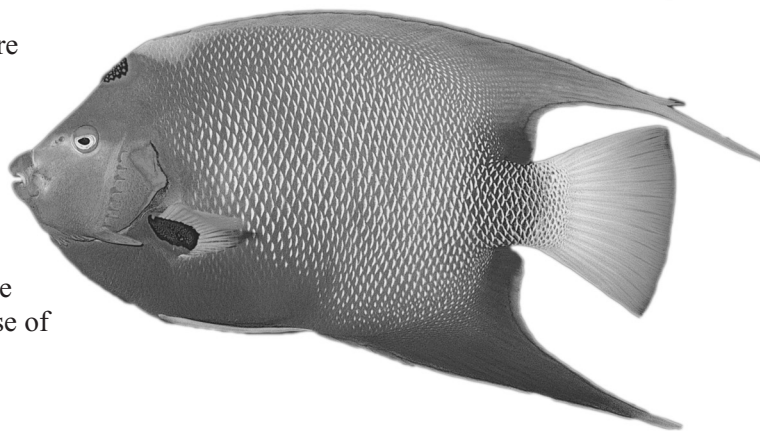
The SKMWG needs to ensure the NBII presents scientifically credible data and information that are consistent across the nodes (thematic and regional). Related to this, we need to demonstrate we are making the best use of our resources when addressing these issues.

These are the kind of concerns that underlie the SKMWG. During the first meeting, the participants agreed the primary task before them was indeed a challenging one. All the nodes need to be able to effectively draw from the same pool of species related data. At the same time, it is also vital that the NBII can extend its data holdings to external partners, both within the national programs as well as internationally.

To maximize the group's effectiveness,

SKMWG documents and communications will be accessible to all NBII participants via the NBII Portal. To ensure the freedom of discussion sometimes necessary for an open and fruitful exchange of views, the e-mail archives and minutes of meetings of the Working Group will be restricted to members and invited experts.

If you would like to know more about the SKMWG and its activities, please get in touch with Crispin Wilson, Senior Scientist, Biodiversity Informatics, by phone (703/648-4294) or e-mail <cwilson@usgs.gov>.



### Electronic or Print Access?

We wanted to take a moment to remind readers that *Access* is available as both a printed publication and online as an electronic document. The location of the online version of *Access* is noted in the masthead (bottom of page 2) of each issue: <<http://www.nbii.gov/about/pubs/news/>>.

If you would prefer to read only the online version from now on, just send an e-mail stating that to <[ron\\_seplic@usgs.gov](mailto:ron_seplic@usgs.gov)>, and we'll remove your name from the standard *Access* mailing list. Next, we'll add you to our listserv for notifying *Access* readers when future online issues are ready – with a link to the online version – so you'll be able to stay up-to-date on NBII developments without adding to your incoming snail mail. It's your call!



# Invasive Species Toolbox

*This is the first installment of a new regular Access column called "Invasive Species Toolbox." The Toolbox's purpose is to raise awareness and facilitate communication about the diverse invasive species projects being undertaken by the NBII and its partners. Just think of this column as a collection of useful items and highlights related to invasive species information management issues. Please send any ideas or suggestions you might have about Toolbox columns to <asimpson@usgs.gov> or <esellers@usgs.gov> and cc: the Access editor <ron\_sepica@usgs.gov>.*

## The Nature Conservancy's Weed Information Management System (WIMS) Now Available

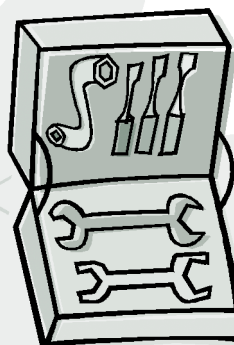
WIMS -- a Microsoft Access-based application for land managers' weed data -- keeps track of weed occurrences (GPS point locations), assessments (size and status of the weed infestations), and management



treatments (that are applied to those weed infestations). Data can be easily exchanged between multiple users and mapped in any standard GIS program. Additionally, WIMS can be used on a handheld unit with a GPS unit to capture data in the field.

The Nature Conservancy is making WIMS freely available to all interested users at <<http://tncweeds.ucdavis.edu/wims.html>>. Some modification to the database may be needed for different local projects. For example, the NBII California Information Node has worked with the Conservancy to modify the application for their partners. Interested users will still need to purchase Microsoft Access, handhelds, and GPS units (if desired).

## Invasive Species Profile Schema Project

With funds from the U.S. State Department, the Secretariat of the Convention on Biological Diversity awarded a two-month consultancy to an NBII partner, the Invasive Species Specialist Group (ISSG), in Auckland, New Zealand, to create a database schema for invasive species fact sheets. The schema will take into account existing invasive species information systems and propose a general format that may be used by members of the Global Invasive Species Information Network (GISIN) to make the information in their databases cross searchable. Michael Browne at ISSG is heading the project and will be consulting with the Global Biodiversity Information Facility, Global Invasive Species Programme, NISbase, CAB International, GloBallast, IABIN's Invasives Information Network, FishBase, BioNET, and other global and regional information networks active in the GISIN.





### The Invasive Species Initiative

#### TNC's Weed Information Management System (WIMS) An Application Tool for Invasive Species Management

- February 2005 -

##### Introduction

TNC's Weed Information Management System (WIMS) is a Microsoft Access-based relational database application that is designed to assist natural resource managers in managing their weed data. WIMS keeps track of three types of data records: weed occurrences (GPS point locations), assessments (size and status of the weed infestation to facilitate monitoring over time), and management treatments applied to those weed infestations. Data can be easily exchanged between multiple users, exported in NAWMA (North American Weed Management Association) standards, and written to shapefiles for mapping in any standard GIS program. A variety of reports can also be easily generated. Additionally, WIMS can be used on a handheld unit (either MS Windows-based Pocket PC or Trimble) with a GPS unit to capture data in the field. When using WIMS on a handheld unit with an ArcPad interface, a site manager can use background imagery and other GIS layers for mapping weeds, then upload the new data into the Access database with a few mouse clicks!


##### Who Can Use WIMS?

Anyone (site managers, preserve stewards, ecologists, researchers, CWMA's, watershed groups, county and state agencies, etc.) who is interested in invasive species management can use WIMS! We developed WIMS initially for our own use (for TNC field staff), but since there has been so much interest by our many partners, we have decided to make the WIMS application available for free to all interested users. You will, however, still need to purchase your own handheld and GPS units and software (if desired).

We can provide technical support and training to TNC staff using WIMS (see the "For TNC Staff" link below). Non-TNC staff should route their questions to the WIMS message board (see the "Troubleshooting WIMS" link, below, for more details).

##### WIMS: A More Detailed Look

Unsure if WIMS is the right tool for your weed mapping and management purposes? This page describes and explains what WIMS is, what its capabilities are, and how WIMS can be used to help you reach your management goals. Also on this page is a WIMS PowerPoint presentation that demonstrates how WIMS is organized, how to tailor WIMS to your project, details what data can be collected, and shows you the available output options!



- [ISI Home](#)
- [Invasives 101](#)
- [TNC projects](#)
- [Invasives planning & strategies](#)
  - [W.I.M.S.](#)
  - [A detailed look](#)
  - [Hardware needs](#)
  - [User's manual](#)
  - [Installation](#)
  - [FAQ](#)
  - [Troubleshooting](#)
  - [Notes to TNC staff](#)
  - [Acknowledgements](#)
  - [Remote sensing](#)
  - [Templates & examples](#)
  - [Mgmt. networks](#)
  - [Volunteers & outreach](#)
- [Invasives & control methods](#)
- [Photo archive](#)
- [Red alerts!](#)
- [Global resources](#)

## News of Latest Aquatic Invaders Delivered to Your Inbox

Interested in aquatic invaders? If you have not already done so, look into the Nonindigenous Aquatic Species database e-mail alert system at <<http://nas.er.usgs.gov/AlertSystem/>>. This partner of the NBII Invasive Species Information Node has created a tool so users can tailor what kind of "recently reported" information will be sent to their inbox, based on the taxonomy and/or geography of new sightings.

# NBII Metadata Training

Do you want to learn more about metadata? New NBII Metadata Workshops are scheduled for the spring and summer! The target audience for this training is anyone who is currently creating Federal Geographic Data Committee (FGDC) metadata and using the NBII Biological Data Profile or who anticipates needing to create this type of metadata. There's no pre-requisite for the Introduction to Metadata class. Participants usually range from beginners to those who have been doing some metadata work and want to learn more. The workshops are generally 1½ days, with the half day as optional time to practice using the software or to ask the trainer additional questions.

Topics covered in the training sessions include:

- Introduction to metadata: what is it, and why is it important,
- Background on the development of the FGDC metadata standard and the Biological Data Profile,
- In-depth look at the seven sections of the standard,
- Tips on writing good metadata and how to implement a program in your organization,
- Metadata tools/software/resources,
- Hands-on time to work with software and practice creating metadata, and
- NBII and FGDC Clearinghouses – how to contribute metadata records to them.

Come join us! The spring and summer tentative calendar follows:

**March 3-4** ▪ Palisades, NY: Introduction to Metadata. Sponsored by the NBII Northeast Information Node and held at the Center for International Earth Science Information Network.

**April 11-12** ▪ TBD (Washington state location): Introduction to

Metadata. Sponsored by the NBII and NatureServe and held in conjunction with NatureServe's Western Regional Conference.

**May 18** ▪ Atlanta, GA: Half-day Introduction to Metadata Workshop, National Conference on Digital Government Research. Sponsored by the National Science Foundation.

**June 16-17** ▪ Arlington, VA: Introduction to Metadata. Sponsored by the NBII and NatureServe and held at NatureServe headquarters.

**June 27-29** ▪ Denver, CO: Train the Metadata Trainer. Sponsored by the NBII and the National Oceanic and Atmospheric Administration and held at the USGS Center for Biological Informatics. This workshop is for those interested in training others on how to create metadata. Participants need a familiarity with metadata such as can be acquired in the Introduction to Metadata workshops.


Additional workshops are pending and will likely be added. Watch the NBII Metadata Training Calendar for dates <<http://www.nbii.gov/datainfo/metadata/training/calendar.html>>! If you are interested in attending any of these sessions, please e-mail the NBII's Metadata Coordinator, Viv Hutchison, at <[vhutchison@usgs.gov](mailto:vhutchison@usgs.gov)> or call Viv at 206/526-6282, ext 329.

The NBII Metadata Program offers more than just training. Check out our Clearinghouse at <<http://www.nbii.gov/datainfo/metadata/clearinghouse/>>. There are now 25 partner nodes contributing records, and we are always interested in talking to new potential partners. The Clearinghouse is managed by NBII partner Oak Ridge National Laboratory in Oak Ridge, TN.

What's more, any time you upload a record to the Clearinghouse for inclusion on the NBII Principal node, your record goes through a quality

assurance/quality control process directed by Diane Schneider at the USGS Fort Collins Science Center in Fort Collins, CO. It is carefully reviewed by Diane's team and a metadata parser.

Finally, the NBII Metadata Program offers assistance in creating your metadata records. Just have a few records to create? Looking at a backlog of legacy records in need of metadata? Contact Viv Hutchison <[vhutchison@usgs.gov](mailto:vhutchison@usgs.gov)> for information on how the NBII's expert metadata creator, Cheryl Solomon (a partner with NASA Global Change Directory) can help. Let's get your data sets described and cataloged!

For more information about the NBII's metadata activities, visit <<http://www.nbii.gov/datainfo/metadata/>>. 

## Butterflies Beckon!



The NBII Mountain Prairie Information Node now curates the Children's Butterfly Site. We invite you to stop by <<http://mpin.nbii.org/insects/kidsbutterfly/index.html>> to learn more about these beautiful, gentle creatures. The site features the stunning photographs of renowned lepidopterist Dr. Paul Opler and his wife, Evi Buckner-Opler.

## Upcoming Events of NBII Interest

NFAIS Annual Conference: "Whose Mind is it Anyway? Identifying and Meeting Diverse User Needs in the Ongoing Battle for Mindshare," Philadelphia, PA.	February 27-March 1	Northwest Council for Computer Education Meeting, Seattle, WA.	March 16-19
American Society for Information Science & Technology (ASIST) Information Architecture Summit, Montreal, Canada.	March 4-7	The 70th North American Wildlife and Natural Resources Conference, Arlington, VA.	March 16-19
Third Conference on Watershed Management to Meet Water Quality Standards and Emerging TMDL, Atlanta, GA.	March 5-9	9th International Symposium on Biogeochemistry of Wetlands, Baton Rouge, LA.	March 20-23
Outcome Assessment Tools for the Library of the Future: Measuring Service Quality and the Impact of Networked Electronic Services, Minneapolis, MN.	March 7	National Science Teachers Association 2005 National Convention, Dallas, TX.	March 31-April 3
Coastal GeoTools '05, Myrtle Beach, SC.	March 7-10	Computer Human Interaction 2005, Portland, OR.	April 2-6
Principles of Ground Water – Flow, Transport, and Remediation, Dublin, OH.	March 14-16	Waterfowl Ecology, Choteau, MT.	April 2-7
George Wright Society 2005 Annual Meeting on Parks, Protected Areas, and Cultural Sites, Philadelphia, PA.	March 14-18	E-Content Institute's Information Highways Conference & Showcase, Toronto, Canada.	April 5-7
Computers in Libraries 2005, Washington, DC.	March 16-18	Open Forum 2005: Semantic Interoperability: Where Meaning Meets Metadata, Berlin, Germany.	April 11-14
		66th Annual Meeting of the Association of Southeastern Biologists, Florence, AL.	April 13-15
		Annual Association of Independent Information Professionals (AIIP) Conference, Tucson, AZ.	April 14-17



NBII National Program Office  
U.S. Geological Survey, 302 National Center  
Reston, VA 20192